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Start scouting for corn stalk rot now

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Abstract
Stressful growing conditions this year are an indicator that stalk rots could be very common. It is a good idea to go out to the field now and identify problem fields so that they can be harvested early enough to avoid lodging. Driving through Missouri on August 10, I saw numerous fields with 50-75 percent of the plants dead, apparently from a combination of drought stress, poor roots, and stalk rot. I have not seen any fields that look as bad in Iowa, but there are some that look very stressed, and they will die prematurely.

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INTEGRATED CROP MANAGEMENT

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This seed production field is starting to experience premature death. The drought stress will predispose plants to stalk rot. Photo courtesy of Paula Flynn.

Scouting should be done before black layer, approximately 40-50 days after pollination. While scouting for stalk rot, look for visible symptoms and test stalk firmness by pinching the lower internodes with thumb and forefinger. Healthy stalks are firm and cannot be compressed. If a stalk can be compressed or feels soft, it is rotted and is a good candidate for lodging. Check at least 100 plants per field, in different locations. Different hybrids and fields with different tillage, rotation, or fertilization histories should be scouted separately. If a field has more than 10-15 percent of the stalks rotted, significant lodging is likely.

Prior to black layer, it is difficult to distinguish among the different stalk rot fungi. The most common in Iowa are *Fusarium*, *Gibberella*, and *Colletotrichum* (anthracnose). Any stalk rot can result in wilting and death of the plants. Leaves turn a gray-green as they die, similar to frost damage, or there may be dead streaks in the leaves as they are scorched from lack of moisture. There may be dark external lesions at the lower nodes, and internally the stalk

base will be dark brown and decayed. Later in the season, the stalk pith appears shredded and discoloration can become obvious in the pith and on the rind. Stalks infected with anthracnose eventually become very discolored, and they may be showing initial stalk lesions now.

High levels of stalk rot susceptibility are a result of plant stress. This year, the wet spring followed by very dry periods during the summer combined to cause moisture stress that will predispose plants to stalk rot. Fields that had earlier problems with "crown rot" (rotting of the base of the plant prior to pollination) are likely to have stalk rot problems as the season winds down.

Timely harvest may have saved these plants from lodging last year.

Future stalk rot problems can be avoided by crop rotation, insect and weed control, adequate potassium fertilization, appropriate plant population and adapted hybrids, avoidance of root and stalk injury, good drainage, proper irrigation (where applicable), and selection of hybrids that have good stalk ratings and that are resistant to foliar diseases. Hybrids with good stalk strength ratings suffer less lodging. See the Iowa State University Extension publication Corn Stalk Rot in Iowa [1] (IPM 50) for more symptom descriptions and details on stalk rot prevention. Also, the Iowa State University 2000 Crop Performance Test results [2] include lodging scores for many hybrids, and last year was a good year to test this trait.

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http://www.ipm.iastate.edu/ipm/icm//ipm/icm/2001/8-20-2001/scoutrot.html

Links:
[1] http://www.exnet.iastate.edu/Pages/plantpath/stalkrot.html
[2] http://www.agron.iastate.edu/icia/YieldTesting3.html

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